



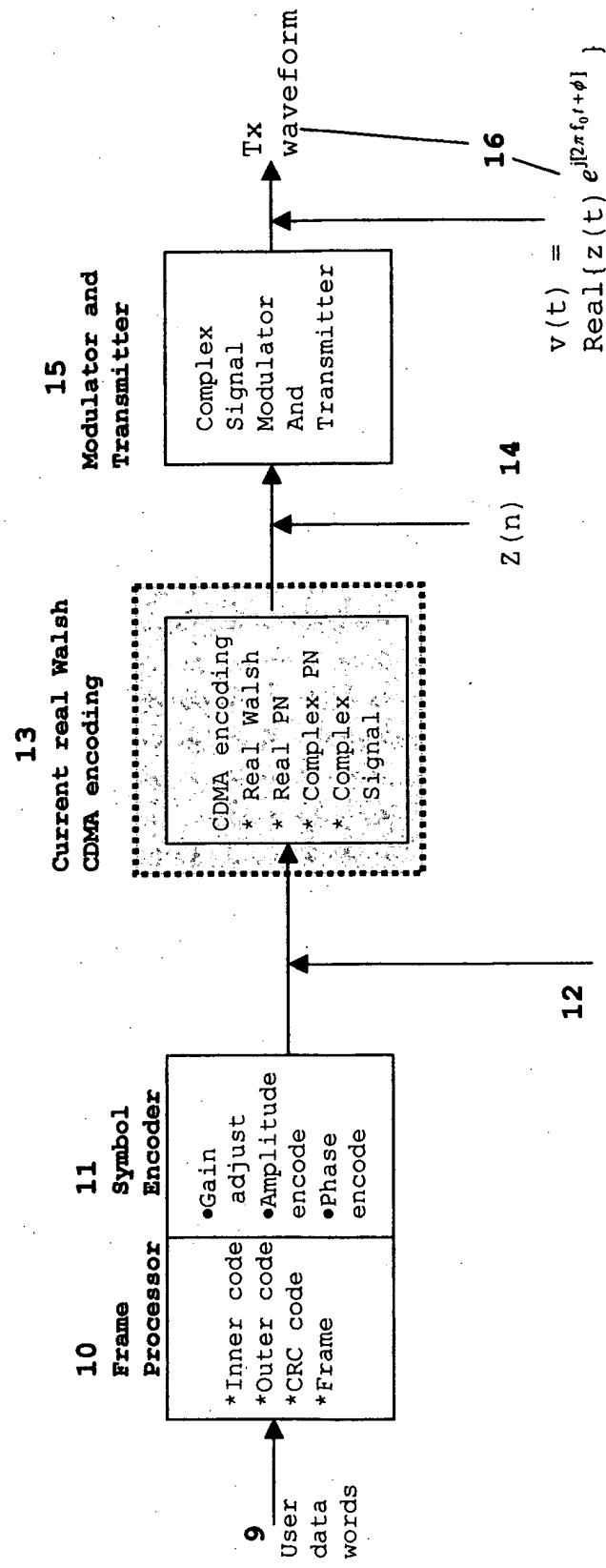
APPLICATION NO. 09/826,117

INVENTION: Hybrid Walsh Codes for CDMA

INVENTOR: Urbain A. von der Embse

DRAWINGS AND PERFORMANCE DATA

**FIG. 1 CDMA Transmitter: Block Diagram**



User data symbols

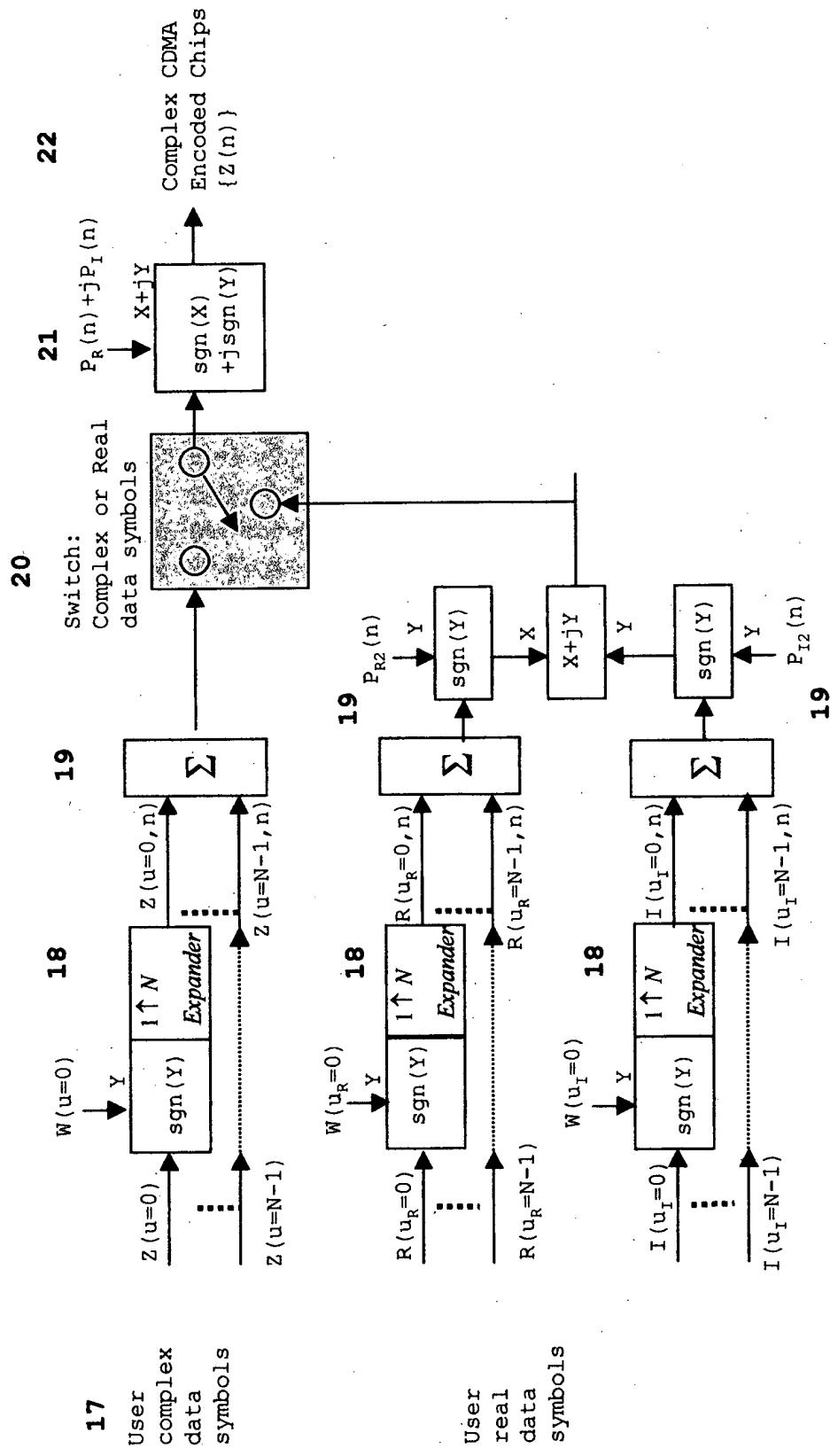
$$= \{Z(u)\} = R(u_R) + jI(u_I)\}$$

For complex data symbols  $u = u_R = u_I$

For real data symbols  $u = \text{index}$  for counting the user pairs  $(u_R, u_I)$

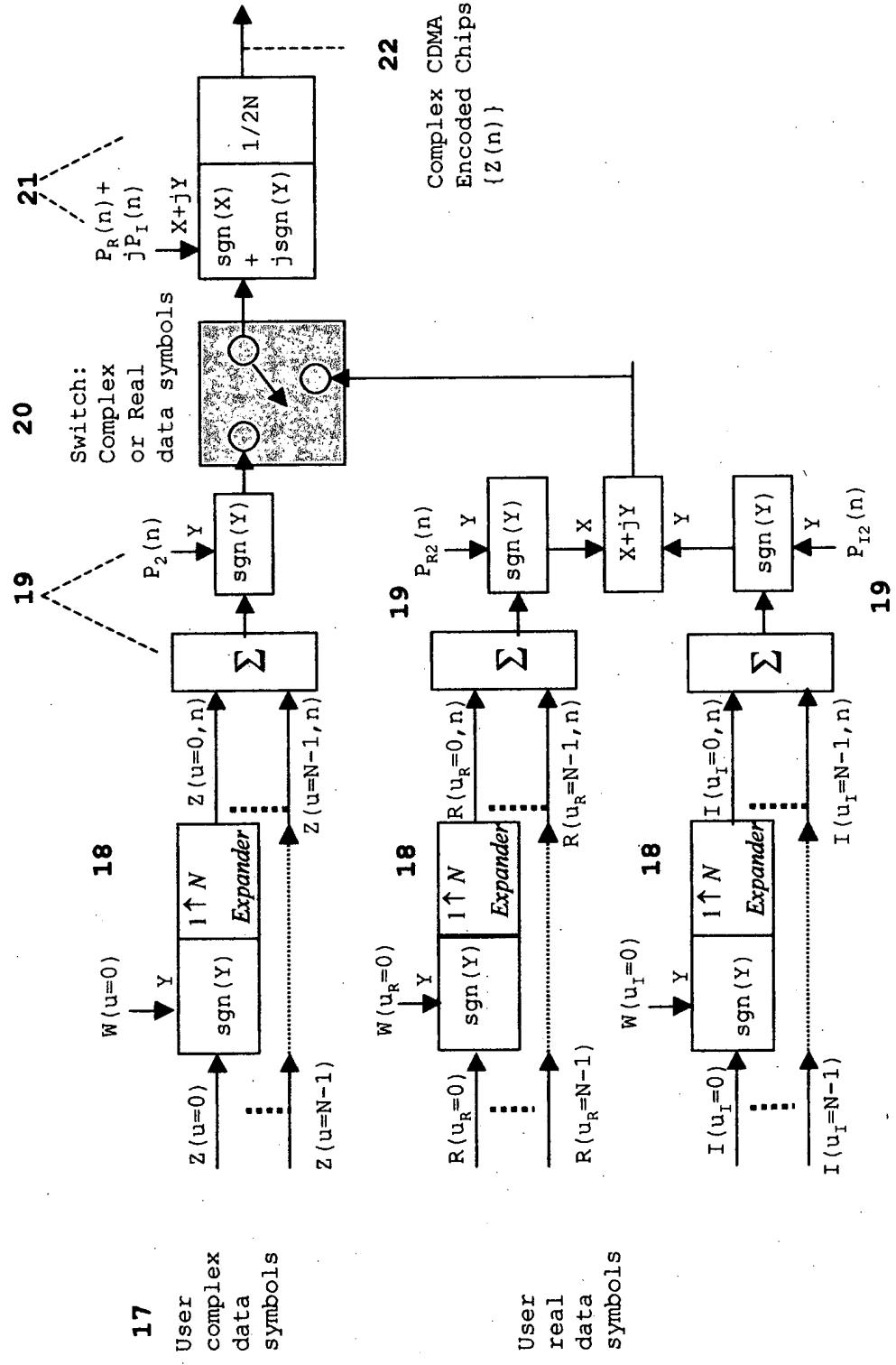
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FIG. 2 Real Walsh CDMA Encoding



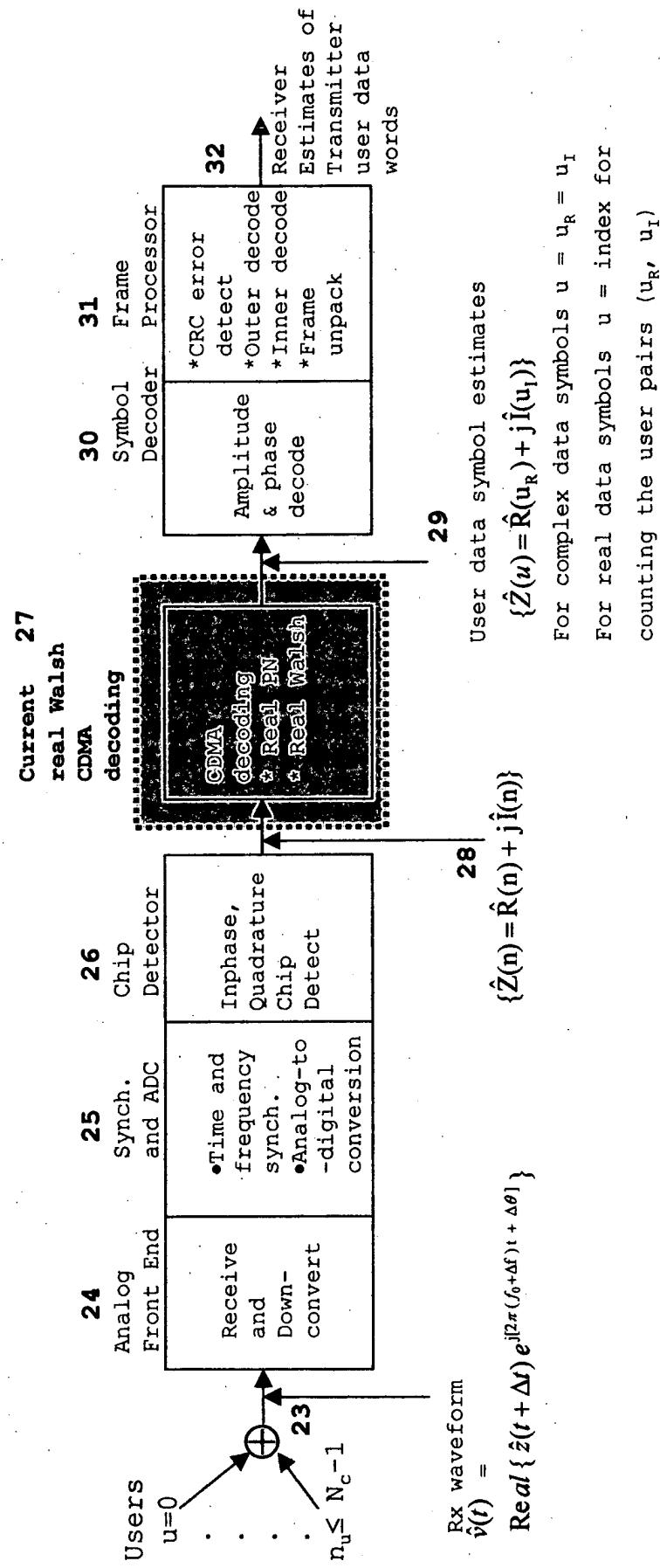
# REPLACEMENT SHEET

**FIG. 2 Real Walsh CDMA Encoding**



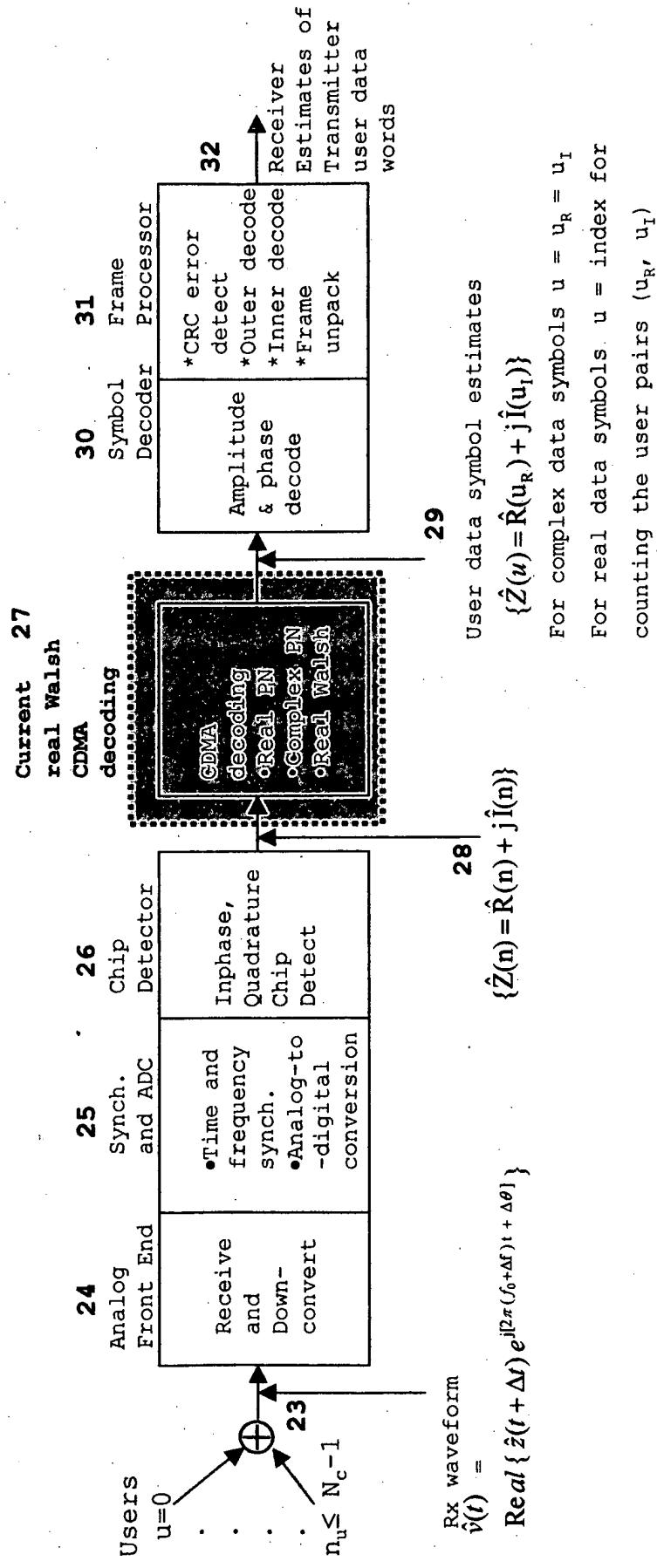
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**FIG. 3 CDMA Receiver Block Diagram**



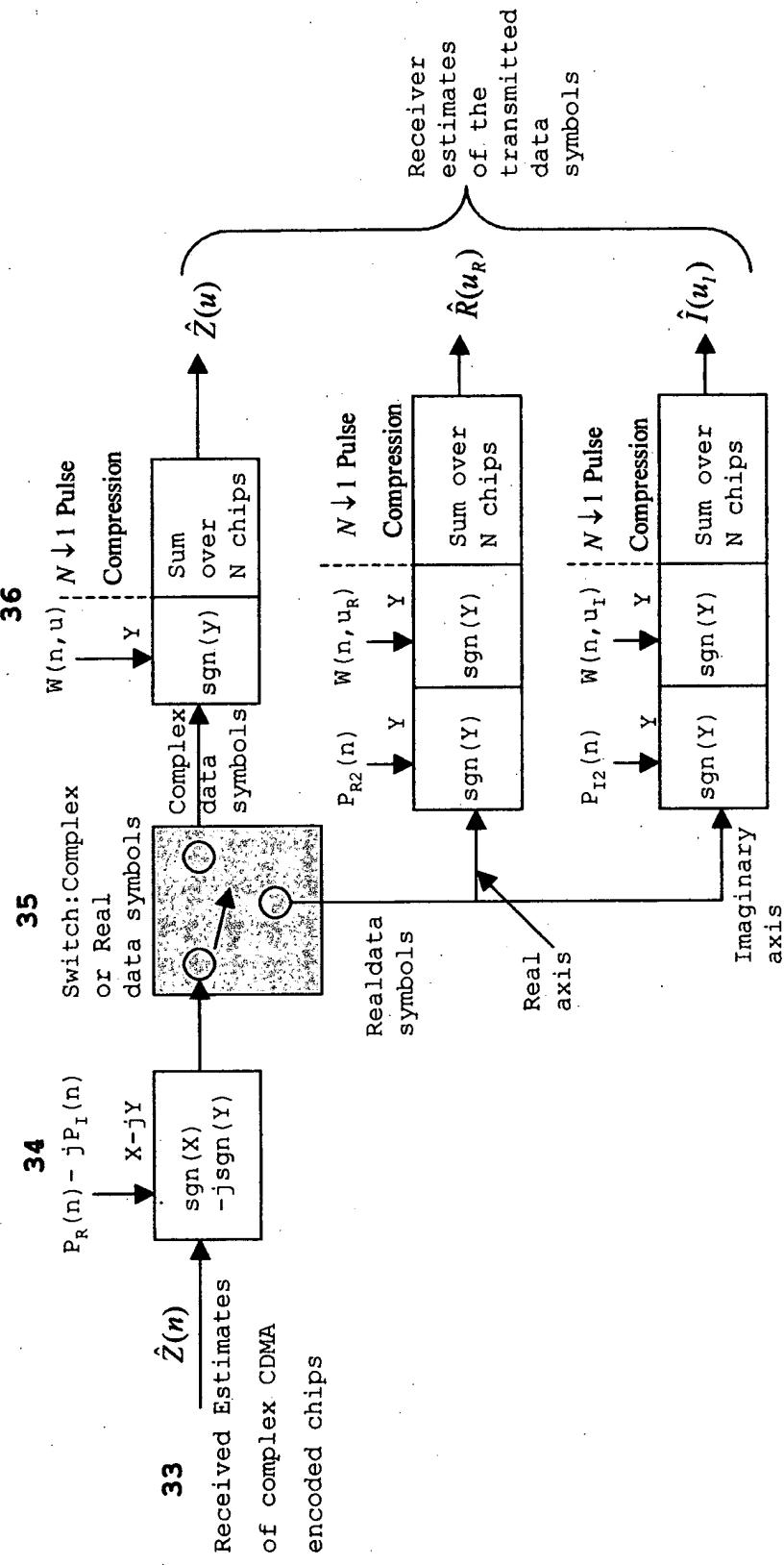
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**FIG. 3 CDMA Receiver Block Diagram**



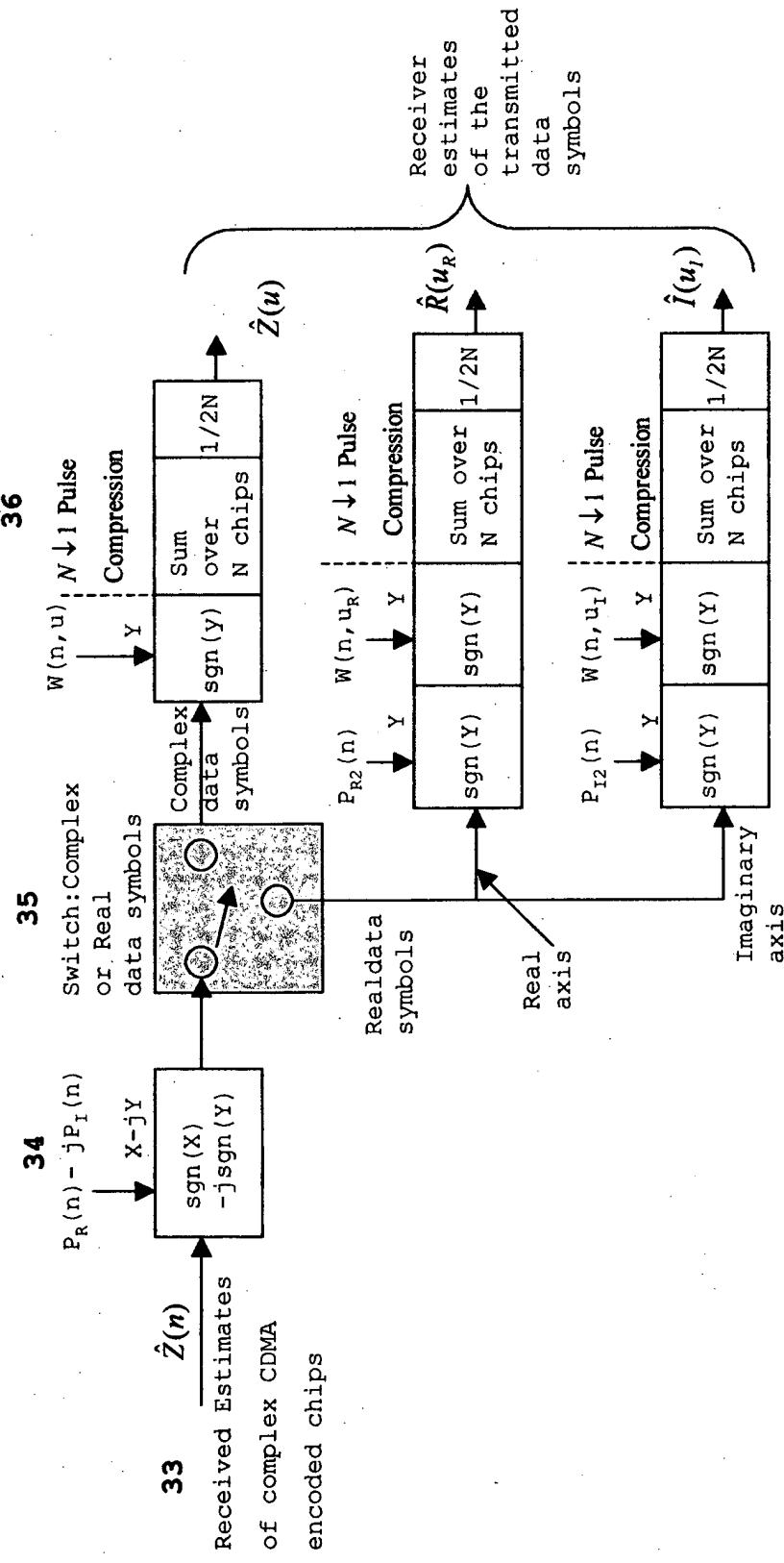
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**FIG. 4 Real Walsh CDMA Decoding**

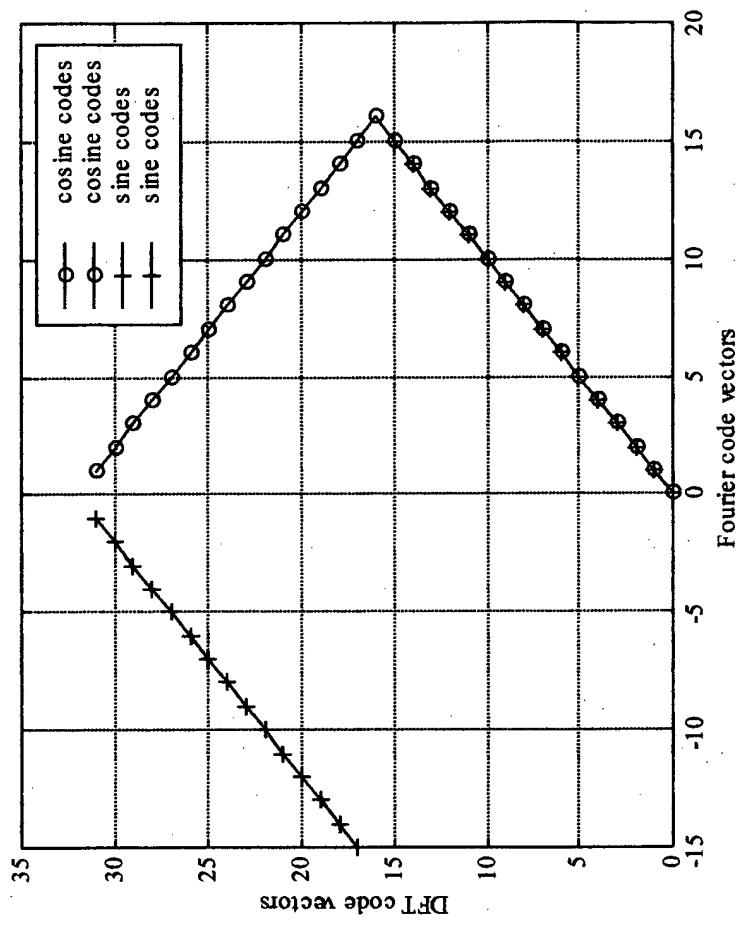


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**FIG. 4 Real Walsh CDMA Decoding**

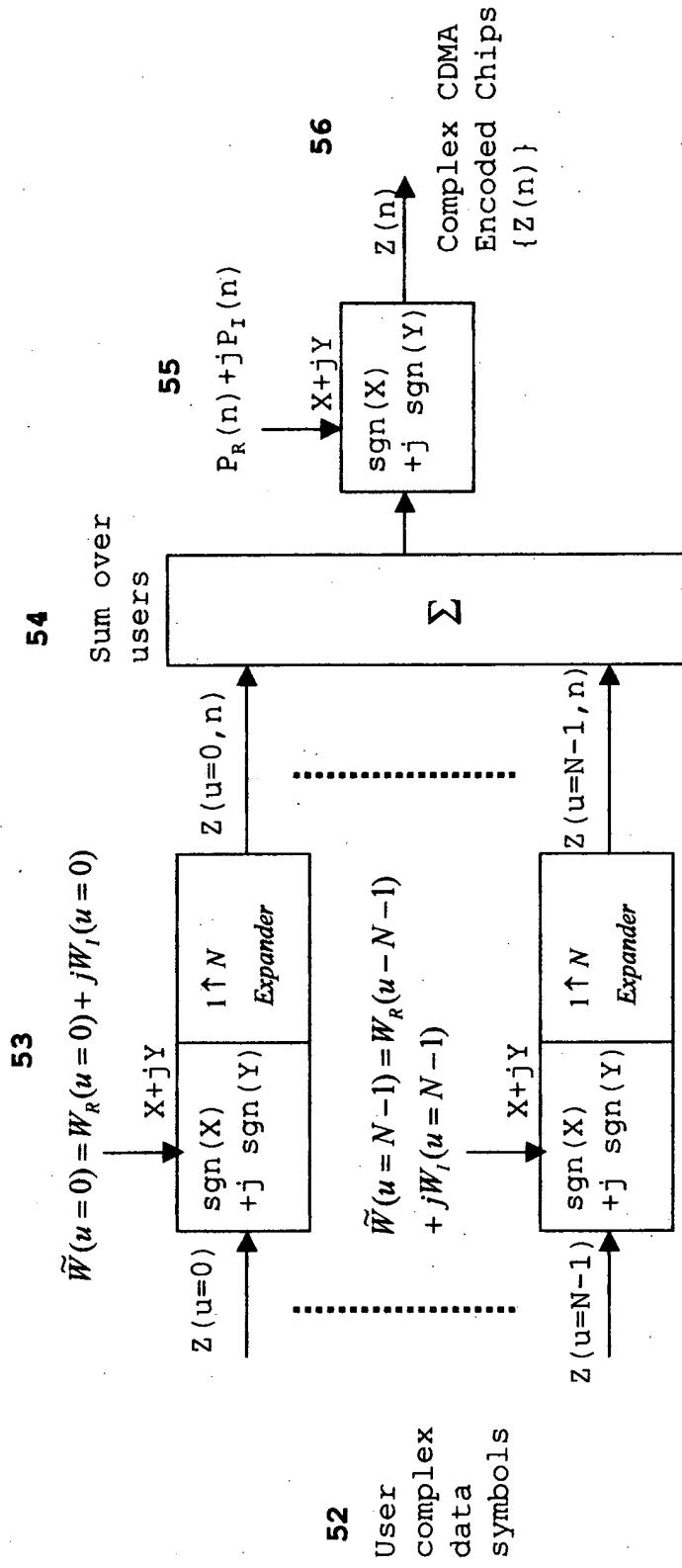


**FIG. 5 Correlation of Fourier Codes with DFT Codes for N=32**



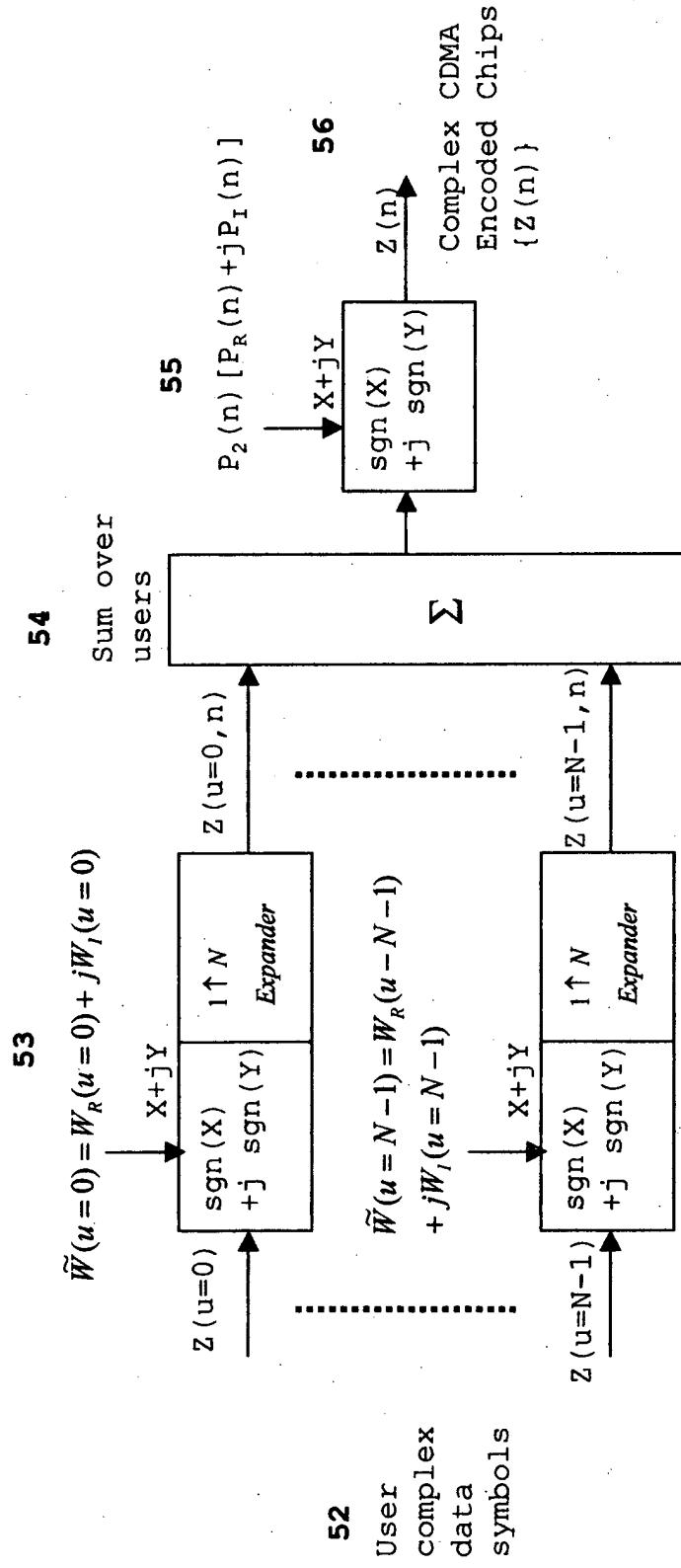
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**FIG. 6 Complex Walsh CDMA Encoding**



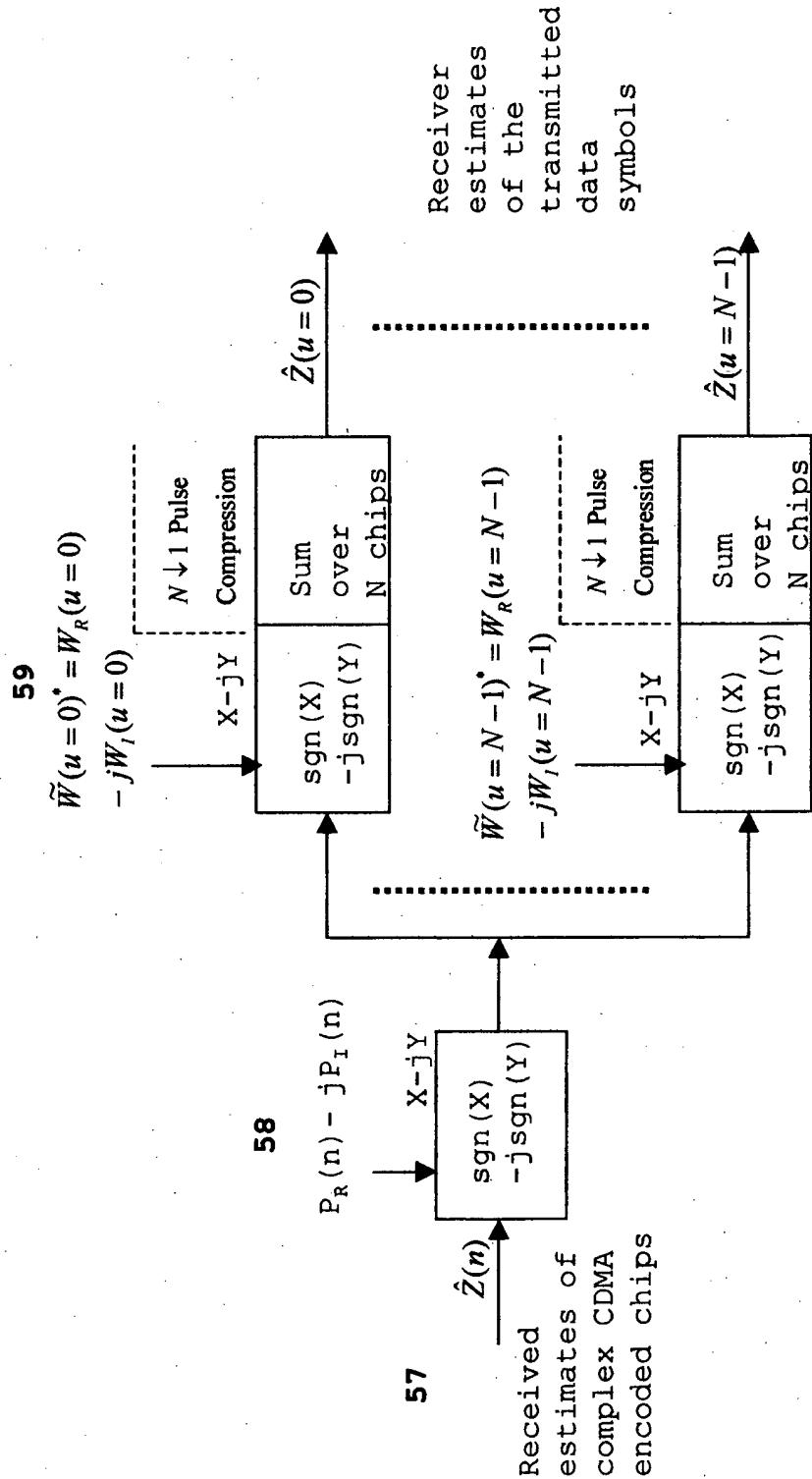
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**FIG. 6 Hybrid Walsh CDMA Encoding**



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**FIG. 7 Complex Walsh CDMA Decoding**



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FIG. 7 Hybrid Walsh CDMA Decoding

